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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,153	03/07/2006	Willibald Schurz	078857.0168	3418

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EXAMINER

ROSENAU, DEREK JOHN

ART UNIT	PAPER NUMBER
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2834

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,153	Applicant(s) SCHURZ ET AL.	
	Examiner Derek J. Rosenau	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-15 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) 9-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8,13-15 and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/5/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 5 recites the limitations "the first contact surfaces" and "the second contact surfaces". There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 14, 15, and 17 rejected under 35 U.S.C. 102(e) as being anticipated by Heinz (US 6794800).
4. With respect to claim 14, Heinz et al. discloses a piezoactuator (Figs 1-8) comprising a piezoceramic (item 1) which can expand when a voltage is applied (column 1, lines 24-27) and contacting elements (item 5) which rest against the piezoceramic (Figs 1-8), wherein the contacting elements are formed as profiled sheets wherein one side of the profiled sheet has first and second contact surfaces spaced at intervals from one another (Figs 1, 3, and 5-8), wherein the profiled sheets are bent such that the first and second contact surfaces press with a predetermined force on the piezoceramic to form an electrical contact (Figs 1, 3, 5, 6, and 8), wherein the first and second contact surfaces are formed in such a way that the first contact surfaces are

formed in such a way that the first contact surfaces form a first contact track and the second contact surfaces form a second contact track (Figs 1, 3, 5, 6, and 8).

5. With respect to claim 15, Heinz discloses the piezoactuator according to claim 14, further comprising a metallization (item 3), against which the contact surfaces rest on the piezoceramic (Figs 1-8), wherein the contact surfaces are fixed relative to the contact surfaces of the metallization in such a way that, when the piezoceramic is axially deflected, no frictional relative movement occurs between contact surfaces and metallization (Figs 1-8).

6. With respect to claim 17, Heinz discloses the piezoactuator according to claim 14, wherein the first and second contact surfaces of the first and second contact tracks extend in the longitudinal direction of the piezoceramic (Figs 1, 3, and 5-8).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6, 8, 13, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinz in view of Schurz et al. (US 7259504) and Schuh et al. (US 6316863).

9. With respect to claim 1, Heinz discloses a piezoactuator (Figs 1-8) comprising a piezoceramic (item 1) which can expand when a voltage is applied (column 1, lines 24-27) and contacting elements (item 5) which rest against the piezoceramic (Figs 1-8),

wherein the contacting elements are formed as profiled sheets which have contact surfaces spaced at intervals from one another (Figs 1, 3, and 5-8).

Heinz does not disclose expressly that the profiled sheets are fixed to an external surface of a plastic cage and the piezoceramic is positioned in a cavity of the plastic cage.

Schuh et al. teaches a piezoactuator in which the piezoceramic is positioned in a cavity (Fig 8) of a plastic cage (column 5, line 66 through column 6, line 11).

Schurz et al. teaches a piezoactuator (Figs 3 and 5) in which profiled sheets (item 6) are fixed to an external surface (Fig 3) of a cage material (item 14) formed around the piezoceramic (Fig 5).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the plastic cage of Schuh et al. and the externally connected profiled sheets of Schurz et al. with the piezoactuator of Heinz for the benefits of better protecting the piezoceramic from damage (column 5, line 66 through column 6, line 11 of Schuh et al.) and reducing the amount of space required for the device (column 4, lines 14-16 of Schurz et al.).

10. With respect to claim 2, the combination of Heinz, Schuh et al., and Schurz et al. discloses a piezoactuator according to claim 1. Heinz discloses that the profiled sheets are bent (Figs 1, 3, 5, 6, and 8)

11. With respect to claim 3, the combination of Heinz, Schuh et al., and Schurz et al. discloses a piezoactuator according to claim 1. Heinz discloses that the profiled sheets

are bent such that the contact surfaces press with a predetermined force on the piezoceramic to form an electrical contact (Figs 1, 3, 5, 6, and 8).

12. With respect to claim 4, the combination of Heinz, Schuh et al., and Schurz et al. discloses a piezoactuator according to claim 1. Heinz discloses a metallization (item 3), against which the contact surfaces rest on the piezoceramic (Figs 1-8), wherein the contact surfaces are fixed relative to the contact surfaces of the metallization in such a way that, when the piezoceramic is axially deflected, no frictional relative movement occurs between contact surfaces and metallization (Figs 1-8).

13. With respect to claim 5, the combination of Heinz, Schuh et al., and Schurz et al. discloses a piezoactuator according to claim 1. Heinz discloses that the contact surfaces are formed in such a way that the first contact surfaces form a first contact track and the second contact surfaces form a second contact track (Figs 1, 3, and 5-8).

14. With respect to claim 6, the combination of Heinz, Schuh et al., and Schurz et al. discloses a piezoactuator according to claim 5. Heinz discloses that the contact surfaces of the two contact tracks extend in the longitudinal direction of the piezoceramic (Figs 1, 3, and 5-8).

15. With respect to claim 8, the combination of Heinz, Schuh et al., and Schurz et al. discloses a piezoactuator according to claim 1. Schurz et al. discloses that the profiled sheets are fixed to fixing points of a cage (Figs 3 and 5). Schuh et al. discloses that the cage is a plastic cage (column 5, line 66 through column 6, line 11).

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16. With respect to claim 13, the combination of Heinz, Schuh et al., and Schurz et al. discloses a piezoactuator according to claim 4. Heinz discloses that the metallization is running laterally along the piezoelectric longitudinal axis (Figs 1, 3, and 5-8).

17. With respect to claim 18, Heinz discloses the piezoactuator according to claim 14.

Heinz does not disclose expressly that the profiled sheets are fixed to an external surface of a plastic cage and the piezoceramic is positioned in a cavity of the plastic cage.

Schuh et al. teaches a piezoactuator in which the piezoceramic is positioned in a cavity (Fig 8) of a plastic cage (column 5, line 66 through column 6, line 11).

Schurz et al. teaches a piezoactuator (Figs 3 and 5) in which profiled sheets (item 6) are fixed to an external surface (Fig 3) of a cage material (item 14) formed around the piezoceramic (Fig 5).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the plastic cage of Schuh et al. and the externally connected profiled sheets of Schurz et al. with the piezoactuator of Heinz for the benefits of better protecting the piezoceramic from damage (column 5, line 66 through column 6, line 11 of Schuh et al.) and reducing the amount of space required for the device (column 4, lines 14-16 of Schurz et al.).

18. With respect to claim 19, Heinz discloses the piezoactuator according to claim 14.

Heinz does not disclose expressly that the profiled sheets are fixed to fixing points of a plastic cage.

Schurz et al. teaches a piezoactuator in which profiled sheets are fixed to fixing points of a cage material (Figs 3 and 5).

Schuh et al. teaches a piezoactuator including a cage, wherein the cage material is plastic (column 5, line 66 through column 6, line 11).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the plastic cage of Schuh et al. and the externally connected profiled sheets of Schurz et al. with the piezoactuator of Heinz for the benefits of better protecting the piezoceramic from damage (column 5, line 66 through column 6, line 11 of Schuh et al.) and reducing the amount of space required for the device (column 4, lines 14-16 of Schurz et al.).

19. With respect to claim 20, the combination of Heinz, Schuh et al., and Schurz et al. discloses a piezoactuator according to claim 1. The claim language “wherein the profiled sheets are caulked to fixing points of a plastic cage” is a product-by-process limitation. It has been held that if a product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process (*In re Thorpe*, 227 USPQ 964).

20. With respect to claim 21, the claim limitations thereof correspond to those of claim 20; therefore, claim 21 is unpatentable over Heinz in view of Schuh et al. and Schurz et al. for the same reasons as above.

Response to Arguments

21. Applicant's arguments filed 20 May 2008 have been fully considered but they are not persuasive. Applicant argues that Heinz does not disclose profiled sheets having the structural features of the amended claim 14. However, the profiled sheets of Heinz have contacting surfaces that extend in both directions from the comb back (item 10), which results in first and second contacting surfaces formed along first and second contact tracks. Applicant argues that Schurz does not disclose the limitation that the profiled sheets are fixed to an external surface of a plastic cage and that the piezoceramic is positioned in a cavity of the plastic cage. However, Schurz et al. does disclose that the profiled sheets are fixed to an external surface of a cage material (Fig 3). Schuh et al. discloses that the cage is a plastic cage and that the piezoceramic is positioned in a cavity of the plastic cage (Fig 8). Applicant argues that the adhesive material of Schurz can not be considered a plastic cage. However, the adhesive material of Schurz can be interpreted as a cage. Again, Schuh et al. discloses that the cage is a plastic cage. Applicant argues that the adhesive material cannot be considered a cage. However, the adhesive material partially surrounds the piezoceramic; therefore, the adhesive material can be interpreted as a cage for the piezoceramic.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek J. Rosenau whose telephone number is (571)272-8932. The examiner can normally be reached on Monday thru Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Derek J Rosenau
Examiner
Art Unit 2834

/D. J. R./
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/Darren Schuberg/
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